

**REMARKS**Regarding the claim amendments presented in this reply:

The amendments to the claims add no new matter. Claim 1 has been amended to read “onto the electron conductor on at least one side of the polymer-electrolyte membrane....” This amendment finds support in the specification on page 7 at indicated lines 2 – 4, for example. All other amendments to claim 1 are editorial in nature, and merely put the claim in better form.

New claim 13 finds support in original claim 1 and throughout the specification.

Regarding the rejection under 35 U.S.C §102(b):

The rejection of claims 1 – 12 under 35 U.S.C. §102(b) over *Reddy et al.* (US 5,084,144) should be withdrawn. Anticipation can only be established by a single prior art reference which discloses each and every element of the claimed invention.<sup>1</sup> “The identical invention must be shown in as complete detail as is contained in the patent claim.”<sup>2</sup> The *Reddy et al.* reference does not show the method of fabricating a membrane-electrode assembly (MEA) of claim 1. Claims 2 – 12 depend from claim 1.

As explained in the specification, “[a]n advantage of the method according to the invention is that as a result of the electrochemical deposition of the catalytic component from the membrane, said catalytic component can be deposited only where the electrochemically active three-phase boundary is also present. The catalytic component is therefore deposited specifically onto the electron conductor in those locations where the ion channels of the membrane terminate.”<sup>3</sup> The *Reddy et al.* reference does not teach the electrochemical deposition of a catalytic component from a polymer-electrolyte membrane onto an electron conductor.

In step A) of the present invention, ions of at least one catalytic component are introduced into a polymer-electrolyte membrane (and/or into an ionomer introduced into

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<sup>1</sup> See, *RCA Corp. v. Applied Digital Data Systems, Inc.*, 730 F.2d 1440, 1444 (Fed. Cir. 1984).

<sup>2</sup> *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236 (Fed. Cir. 1989).

<sup>3</sup> Page 6, line 36 – page 7, line 4 of the Specification (emphasis added).

the reaction layers). In step B), an electron conductor is applied to both sides of the polymer-electrolyte membrane. Finally, in step C), the ions of the catalytic component, are electrochemically deposited from the polymer-electrolyte membrane (and/or from the ionomer, introduced into the reaction layers) onto the electron conductor. According to claim 1, this electrochemical deposition of the ions of the catalytic component from the polymer-electrolyte membrane onto the electron conductor must occur on at least one side of the polymer-electrolyte membrane.

The *Reddy et al.* reference does not teach a step that is identical to step A). Instead, the reference describes, impregnating “a solution comprising an ion-exchange polymer (the solid polymer electrolyte)”<sup>4</sup> into the catalytic layer of an uncatalyzed gas-diffusion electrode (GDE). This step is not equivalent to introducing ions of at least one catalytic component into a polymer-electrolyte membrane (and/or into an ionomer introduced into the reaction layers).

The *Reddy et al.* reference does not teach a step that is identical to step C). The reference merely describes inserting the GDE into “a plating bath containing ions....”<sup>5</sup> Thus, any ions deposited onto the GDE are not deposited from a polymer-electrolyte membrane (and/or from an ionomer, introduced into the reaction layers of the polymer-electrolyte membrane). Indeed, such deposition would be impossible according to the process described in the *Reddy et al.* reference, because only after completion of the *Reddy et al.* process can the GDE “be used as the cathode and/or the anode of a solid polymer electrolyte cell....”<sup>6</sup>

Applicants respectfully submit that the present rejection should be withdrawn, because *Reddy et al.* reference does not show the identical invention “in as complete detail as is contained in ... claim [1].”<sup>7</sup>

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<sup>4</sup> Column 4, lines 5 – 6 of US 5,084,144.

<sup>5</sup> Column 4, line 15 of US 5,084,144.

<sup>6</sup> Column 5, lines 4 – 5 of US 5,084,144.

<sup>7</sup> *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236 (Fed. Cir. 1989).

Regarding the rejections under 35 U.S.C §112, second paragraph:

35 U.S.C §112, second paragraph requires that the claims must particularly point out and distinctly define the metes and bounds of the subject matter that will be protected by the patent grant. This requirement “is an objective one because it is not dependent on the views of applicant or any particular individual, but is evaluated in the context of whether the claim is definite - i.e., whether the scope of the claim is clear to a hypothetical person possessing the ordinary level of skill in the pertinent art.”<sup>8</sup> Thus, “[i]n rejecting a claim under the second paragraph of 35 U.S.C. 112, it is incumbent on the examiner to establish that one of ordinary skill in the pertinent art, when reading the claims in light of the supporting specification, would not have been able to ascertain with reasonable degree of precision and particularity the particular area set out and circumscribed by the claims.”<sup>9</sup> The Examiner has not met this standard. Instead, the Examiner has merely argued that certain phrases are “unclear to the Examiner.” Again, Applicants respectfully stress that the standard to be applied is not a subjective one.

The rejection of claim 1 under 35 U.S.C §112, second paragraph should be withdrawn. This rejection is moot in light of the amendment to claim 1.

The rejection of claims 2 and 3 under 35 U.S.C §112, second paragraph should be withdrawn. The Examiner argues that the phrase, “fuel cell conditions,” is “unclear” because “there are so many ‘conditions’ that are part of a fuel cell and its operation.”<sup>10</sup> The Examiner has not established that one of ordinary skill in the pertinent art, when reading the claims in light of the supporting specification, would not have been able to ascertain with reasonable degree of precision and particularity the particular area set out and circumscribed by the claims.”<sup>11</sup> Thus, the present rejection cannot properly be maintained. To assist the Examiner in objectively evaluating the phrase, “fuel cell conditions,” from the perspective of one of ordinary skill in the pertinent art, when reading the claims in light of the supporting specification, Applicants respectfully direct the Examiner to the specification as a whole, and to page 7, lines 22 – 29, in particular.

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<sup>8</sup> MPEP § 2171.

<sup>9</sup> *Ex parte Wu*, 10 USPQ2d 2031 at 2033 (BPAI 1989).

<sup>10</sup> Page 2, lines 17 – 18 of the present Office action.

<sup>11</sup> *Ex parte Wu*, 10 USPQ2d 2031 at 2033 (BPAI 1989).

The rejection of claims 4 and 5 under 35 U.S.C §112, second paragraph should be withdrawn. The Examiner argues that the phrase, “electrolytic conditions,” is “unclear” because “there are so many ‘conditions’ that are part of an electrolytic cell and its operation.”<sup>12</sup> The Examiner has not established that one of ordinary skill in the pertinent art, when reading the claims in light of the supporting specification, would not have been able to ascertain with reasonable degree of precision and particularity the particular area set out and circumscribed by the claims.”<sup>13</sup> Thus, the present rejection cannot properly be maintained. To assist the Examiner in objectively evaluating the phrase, “electrolytic conditions,” from the perspective of one of ordinary skill in the pertinent art, when reading the claims in light of the supporting specification, Applicants respectfully direct the Examiner to the specification as a whole, and to page 8, lines 19 – 35 in particular.

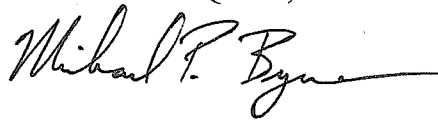
In Conclusion:

The present application is in condition for allowance. Applicants request favorable action in this matter. In order to facilitate the resolution of any issues or questions presented by this paper, the Examiner is welcome to contact the undersigned by phone to further the discussion.

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<sup>12</sup> Page 3, lines 1 – 2 of the present Office action.

<sup>13</sup> *Ex parte Wu*, 10 USPQ2d 2031 at 2033 (BPAI 1989).